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Emotional intelligence, coping and exam-related stress in Canadian undergraduate students

Elizabeth J. Austin*

Department of Psychology, University of Edinburgh, UK

Donald H. Saklofske

Sarah Mastoras

Division of Applied Psychology, University of Calgary, Canada

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Corresponding author. Elizabeth Austin, University of Edinburgh, Psychology, 7 George Square, Edinburgh, EH8 9JZ, UK. Elizabeth.Austin@ed.ac.uk

Abstract

The associations amongst emotional intelligence (EI), coping, personality and exam-related stress in a group of 475 Canadian undergraduate students were examined. Stress was measured at the start of the semester and again in the pre-exam period. Higher levels of stress were associated with lower scores on EI components, and higher scores on emotion-focussed coping and Neuroticism. A scale-level factor analysis of the EI and coping subscales produced three composite factors, which each had high loadings from at least one EI and one coping subscale. The associations of the Emotion Regulation factor (high loadings of several EI components and emotion-focussed coping) and the Task Focus factor (high loadings of Adaptability EI and task-focussed coping) with personality, stress and subjective well being (SWB) were examined using structural equation modelling. The results showed that these factors mediated the effect of personality on stress and SWB.

Stress in university students is associated with psychological distress (e.g. Morrison & O'Connor, 2005) and can also adversely impact academic performance (Pritchard & Wilson, 2003). The existence of these associations means that understanding the psychological characteristics of students who are vulnerable to stress is important. In addition, there is considerable evidence that the associations of personality, coping style and other individual difference variables with stress are similar across contexts (e.g. occupational, educational), meaning that studies of student stress also provide data which are relevant to other populations. In this paper findings from a study of personality, emotional intelligence (EI), coping style and stress in Canadian students are reported. The associations of these measures with stress in student and other populations, and the interrelationships amongst personality, coping and EI will first be briefly reviewed.

Personality, coping and stress

The most robust findings on the associations between personality and stress relate to the trait of Neuroticism (N), which has consistently been found to be associated with stress symptoms, with individuals scoring higher on N reporting higher stress levels (Matthews, Deary, & Whiteman, 2003). Evidence has also been found for negative associations of stress with Extraversion (E) and Conscientiousness (C), (e.g. Deary et al., 1998; Vollrath, 2000). The consideration of coping styles and their relationships with personality gives further insight into these associations. Key findings are of associations of emotion focussed coping with distress and worry (Matthews, Campbell, Saklofske, & Mohamed, 2000) and of N with emotion-focussed coping and more generally with coping strategies which are classified as problematic or ineffective. By contrast E and C have been found to be associated

with task-focussed coping and with more generally adaptive coping strategies (Connor-Smith & Flachsbart, 2007; Hewitt & Flett, 1996).

Emotional intelligence

In this study we focus on trait EI. Trait EI is assessed by self-report, covers emotion-related self-perceptions, and has overlap with the personality domain (Petrides, Pita, & Kokkinaki, 2007). Models of trait EI include components which are clearly linked to coping. In particular, intrapersonal EI would be expected to be associated with better emotion regulation and stress management, whilst interpersonal EI would be expected to be linked to a greater tendency to employ coping strategies involving seeking support from others. Previous studies have found that trait EI is associated with better emotion regulation and with adaptive coping (Mikolajczak, Nelis, Hansenne, & Quoidbach, 2007; Petrides, Pérez-González, & Furnham, 2007; Petrides et al., 2007; Saklofske, Austin, Galloway, & Davidson, 2007), and with lower levels of stress and burnout (Mikolajczak, Luminet, & Menil, 2006; Mikolajczak, Menil, & Luminet, 2007; Pau et al., 2007; Slaski & Cartwright, 2002). In students, trait EI is positively associated with retention and with academic performance during the period of transition from school to higher education (Parker, Summerfeldt, Hogan, & Majeski, 2004; Parker, Hogan, Eastabrook, Oke, & Wood, 2006).

A study reported by Saklofske et al. (2007) examined the associations of trait EI with coping using a factor-analytic and structural equation modelling (SEM) approach. Factor analysis showed trait EI and rational coping loading positively on a higher-order factor, whilst emotion coping loaded negatively, and SEM showed this composite factor acting as a mediator between personality and health behaviours. The scope of this investigation of EI/coping associations was however limited by the use

of a short trait EI scale, meaning that the associations of EI sub-components with coping were not investigated. In the present study the short form of the EQ-i (Bar-On, 2002) was used, allowing the associations of the five EI sub-components measured by this scale with coping to be examined. Coping was assessed using the Coping Inventory for Stressful Situations (Endler & Parker, 1999), which has sub-scales measuring task-focussed, emotion-focussed, distraction and social diversion coping. In view of the content of the EQ-i subscales, the following associations were hypothesised:

- The Intrapersonal, Stress Management and General Mood components will be negatively correlated with emotion-focussed coping.

- The Adaptability component, which covers problem-solving and flexibility in the emotional domain, will be positively correlated with task-focussed coping.

- The Interpersonal EI component will be positively correlated with social diversion coping.

In addition it was expected that:

- A scale-level factor analysis of the EI and coping scales will give meaningful higher-order factors.

- One or more of these factors will mediate the associations between personality and stress.

The second of these predictions follows from previous findings (e.g. Deary et al., 1996) showing that coping style mediates the relationship between personality and stress, and the findings of Saklofske et al (2007) showing a composite EI/coping factor playing a similar role in mediating the relationship between personality and health behaviours.

Method

Participants

The participants who completed the initial survey were 475 undergraduate students at the University of Calgary (143 male, 332 female); the mean age of the sample was 20.56 years, standard deviation 4.47 years. A sub-group of 350 of these respondents (98 male, 252 female) also completed a follow-up survey.

Materials

EQ-i: Short (Bar-On, 2002). This 51-item scale provides a measure of total EI and five sub-components: Intrapersonal (associated with awareness of one's own feelings and positivity), Interpersonal (interpersonal/social skills), Adaptability (ability to cope flexibly with everyday problems), Stress Management and General Mood (happiness and optimism). Each item consists of a short statement, to which participants are asked to indicate how closely they identify using a five-point scale.

Personality Mini-Markers (Saucier, 1994). This 40-item scale of trait-descriptive adjectives provides a measure of personality based on five dimensions: Extraversion (E), Agreeableness (A), Conscientiousness (C), Neuroticism (N) and Intellect/Openness/Imagination (O). Participants are presented with a list of traits (e.g. bashful, moody, talkative) and asked to describe how accurately each trait describes them on a nine-point scale.

Coping Inventory for Stressful Situations - Revised (CISS-Adult; Endler & Parker, 1999). This 48-item scale provides a measure of three major coping styles: Task-Oriented, Emotion-Oriented, and Avoidance-Oriented Coping. Scores can also be obtained for two types of avoidance patterns: Distraction and Social Diversion. For each item, participants are asked to indicate on a five-point scale how often they have engaged in that activity when they encounter difficult or stressful situations.

Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1998.) This scale provides a measure of positive and negative affect. Participants are presented with a list of twenty affect-descriptive adjectives (10 positive, 10 negative), and for each, asked to indicate to what extent they have felt that way within a specified period of time using a five-point scale.

Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelsetein, 1983). This 14-item scale provides a measure of the degree to which situations in one's life are appraised as stressful, and can be used as an outcome measure of experienced levels of stress. On each item, participants are asked to indicate how often they have felt that way using a five-point scale. The PSS was completed twice at each testing point, using "in the last week" and "in the last year" as the specified time periods.

Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). This five-item scale provides a measure of global life satisfaction, and has been shown to have satisfactory psychometric properties. On each item, participants are asked to indicate their agreement using a seven-point scale.

Course-related items. Feelings about the courses being taken were examined using the following items, each of which was responded to on a five-point scale: Overall, I enjoyed my courses this semester; Overall, my courses this semester were

hard/difficult and required considerable time and effort; Overall, I learned a lot from my courses this semester; I am happy with the courses I chose this semester; I feel prepared for my final exams. Respondents were also asked to indicate their expected average grade.

Procedure

Participants were recruited through scheduled classes. An investigator attended the class and described the study. Participants completed a consent form and were subsequently emailed a link which allowed them to access the survey website. The initial survey contained the measures listed above, apart from the course-related items, and was completed at the start of the semester. An option was included to provide a contact email address for participation in a follow-up study. Participants who indicated willingness to take part in this were contacted by email approximately two weeks before the end of semester exams and given the link to the second survey. This contained the PSS (last year and last week versions), PANAS, SWLS, and the course-related items.

Results

Descriptive statistics for all measures are shown in Table 1, and the correlations amongst them in Table 2. Considering the correlations amongst the EI and coping scales, it can be seen that the Intrapersonal, Stress Management and General Mood components are associated strongly and negatively with emotion- focussed coping, whilst the Adaptability component is strongly associated with task-focussed coping. The stress measures show particularly strong associations with EQ-i Stress Management and General Mood, emotion-focussed coping and N.

Tables 1 and 2 near here

For the measures which were taken both at the start of the study (T1) and immediately before exams (T2), the values at the two time points were compared using paired-samples *t*-tests. The results showed that at T2 levels of PA and life satisfaction were significantly lower, whilst NA and stress in past week were significantly higher. The *t* (349) values were 11.34 (PA), 5.19(NA), 9.20(stress), all $p < .001$, and 2.11 (life satisfaction) $p = .036$. Reported levels of stress over the past year were not significantly different at the two time points. These results indicate that the measure of stress over the past year can be viewed as a stable trait measure of tendency to report stress, whilst the measure of stress over the past week is (as expected) a state measure which increased in response to the more stressful situation (proximity of exams) at T2. There were also parallel changes in levels of PA, NA and life satisfaction.

As the age distribution of the sample was non-normal, with a preponderance of younger students, mean scores were compared for younger students aged under 24 ($N = 415$ at T1, 303 at T2) and older students, aged 24+ ($N = 60$ at T1, 42 at T2). Scores on the EI components were compared for the two groups as EI is expected to increase with age (Petrides, Furnham, & Mavroveli, 2007), and the stress scores were also compared. The results, shown in Table 3, indicate higher levels of EI and lower levels of stress in the older group, with significant effects for total EI score and the Adaptability component, stress over the last week at T1 and over the last year at T2. The results of *t*-tests examining sex differences in personality, coping style, EI and stress are shown in Table 4. The main findings of interest are that females reported higher stress levels than males, higher levels of N, and more use of emotion-focussed, distraction and social diversion coping.

Tables 3 and 4 near here

Examination of the course-related items from the follow-up questionnaire to determine whether they could be combined to produce a course attitude scale indicated that the item relating to perceived difficulty of courses was not strongly correlated with the other items and was therefore omitted. The internal reliability of the resulting scale was found to be improved by also dropping the item prepared for exams; for the remaining three items internal reliability was .86. Correlations of this scale (for which higher scores indicate more positive feelings about the courses taken), the other two items, and expected course grade with the other study measures are shown in Table 2.

In order to examine the possibility that the coping and EI scales formed higher order composites, a scale-level factor analysis of the coping and EQ-i subscales was performed. Examination of the scree diagram and parallel analysis both indicated the extraction of three factors, explaining 66% of the variance, which are shown in Table 5. The first factor (labelled Emotion Regulation) can be seen to have high loadings from the EQ-i General Mood, Intrapersonal and Stress Management components, together with a negative loading of emotion-focussed coping. The high loadings on the second factor (labelled Avoidance) are social diversion and distraction coping, and EQ-i Interpersonal, whilst Adaptability and Task-focussed coping load on the third factor (labelled Task Focus). Thus each coping style from the CISS was found to load on a factor together with one or more EI components. Table 6 shows the correlations of the factor scores with other study variables. It can be seen that stress is most strongly negatively associated with the Emotion Regulation factor. Negative

associations with the other factors are moderate for Task Focus and weak for Avoidance.

Tables 5 and 6 near here

As in previous work (Saklofske et al., 2007) a model in which the composite factors derived from the coping and EI scales mediate the relationship between personality and stress was examined; as sex and age were associated with stress levels these were also included in the model as antecedent variables. The initial conceptual form of the model is shown in Figure 1 and the final model in Figure 2. It was assumed that stress over the last year (a trait variable) would be antecedent to stress over the last week (a state variable), which would be causally linked to stress over the last week measured at follow-up. In view of the weak correlations of the Avoidance factor with stress, only scores for the Emotion Regulation and Task Focus factors were included in the model. Openness, which was weakly associated with the other relevant variables was also excluded, so initial modelling included the personality traits N, E, A and C. The results indicated that a more parsimonious model could be obtained by focussing on N and C only, as these had much larger path coefficients connecting them to one of the coping factors compared to those for E and A. The final model is shown in Figure 2; all paths were significant. The model is consistent with the structure outlined in Figure 1, but with additional direct paths from N and C to state stress at T1. The effects of sex on stress levels are accounted for indirectly via relationships of sex with N and with the Emotion Regulation factor. Age group is directly negatively related to state stress at Time 1 (i.e. older students are less stressed), and positively related to Emotion Regulation. Examining the path

coefficients shows that, as would be expected both from theoretical considerations and from the correlations in Table 2, the strongest paths linking personality to the coping factors are those between N and Emotion Regulation, and C and Task Focus. The path from the Emotion Regulation factor to trait stress is stronger than that from the Task Focus factor. The model thus indicates that the two composite coping factors mediate the effects of personality on trait stress, which in turn influences state stress levels, but that state stress is also directly related to C and N. The fit statistics for the final model were normed fit index .94, non-normed fit index .93, comparative fit index .96, standardised RMR .053, RMSEA .079.

A similar modelling exercise was carried out for subjective well-being (SWB), calculated as a composite of life satisfaction, PA and NA (Lucas, Diener, & Suh, 1996). Theoretical considerations and examination of the correlation matrix indicated the inclusion of E, N (the traits most strongly theoretically linked to SWB, e.g. Diener, 2000), sex, and the Emotion Regulation composite factor in this model; age group was initially included but was found not to have any significant model paths. This model, shown in Figure 3, is similar to the stress model, with Emotion Regulation partially mediating the association between personality and SWB. The fit statistics for this model were normed fit index .98, non-normed fit index .97, comparative fit index .98, standardised RMR .032, RMSEA .072.

Figures 1, 2 and 3 near here

Discussion

This study examined the associations amongst EI, coping and personality and their relationships with both baseline stress levels reported by students and stress

experienced in the immediate pre-exam period. The expected correlation pattern of EI and coping components emerged, with emotion-focussed coping negatively associated with the Intrapersonal, General Mood and Stress Management EI subscales, whilst task-focussed coping was positively associated with Adaptability, and social diversion coping with Interpersonal EI. There were in addition a number of coping/EI associations not specifically predicted, in particular task-focussed coping was significantly correlated with all EI components, suggesting that high EI is globally associated with a greater tendency to adopt a task-focussed approach. A scale-level factor analysis of the coping and EI components gave interpretable composite factors with a structure which was in accordance with the correlational hypotheses. Emotion-focussed coping loaded on a factor (Emotion Regulation) with General Mood, Intrapersonal and Stress Management, whilst social diversion (and also distraction) coping loaded on a factor (Avoidance) with Interpersonal EI, and task-focussed coping on a factor (Task Focus) with Adaptability. The Emotion regulation factor was strongly negatively related to stress; associations for the Task Focus factor were also negative but less strong, whilst those for the Avoidance factor were weak.

Using structural equation modelling it was found that coping factors mediated the associations between personality and both stress and SWB. These results extend those of Saklofske et al. (2007), who examined the role of one general coping/EI factor as a mediator of the effect of personality on health behaviours, by examining the role of two distinct coping/EI composite factors (Emotion Regulation and Task Focus). The structure of these models closely parallels those for personality, coping and burnout derived by Deary et al (1996); in this work emotion-focussed coping was found to mediate the effect of N on components of burnout, with task-focussed coping

playing the same role with respect to C. The results presented here and elsewhere, extending this approach by including EI as well as coping in such models, provide growing evidence that dispositional differences derived from combining components of coping and EI, in particular those related to emotion regulation, play a key role in the dynamics of the relationships of personality with health and well-being.

In terms of student stress vulnerability, the associations found amongst EI, stress and coping confirmed previous findings that stress is positively associated with N and emotion-focussed coping, and negatively associated with task focussed coping, EI, C, E and A. Consistent with previous studies where sex differences in student stress were examined (e.g. Darling, McWey, Howard, & Olmstead, 2007; Pau et al., 2007; Tyssen et al., 2007), reported stress was higher in female students. In the present study older students were found to experience less stress and the model shown in Figure 2 indicates that this is partly accounted for by higher scores on the Emotion Regulation factor. The associations of student stress with academic success were not directly examined in this study, but reported stress immediately before exams was found to be negatively correlated with predicted grade, and also with feelings of being prepared for the exams and with a positive view of courses taken.

Limitations of the study include reliance on self-report measures. The use of more objective physiological measure of stress such as hormone levels and cardiovascular responses (e.g. Loft et al., 2007) and examination of the associations of such measures with personality, coping and EI would be of considerable interest, as would the inclusion of objective exam performance data as an outcome measure.

Within the context of research on trait EI, this study has provided additional support for the communalities amongst components of trait EI and coping, with evidence being found for intrapersonal EI being particularly salient to the process of

coping with exam stress. These results suggest individual characteristics that could be addressed when designing personal development interventions to support vulnerable students. Whereas personality traits are relatively stable, meaning that programmes targeting the underlying stress-related trait of Neuroticism would be unlikely to engender change, the variables which are "downstream" from personality in the model shown in Figure 2 are likely to be more malleable, and development of EI and emotion regulation skills could be addressed in such programmes.

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Table 1. Descriptive statistics

	Overall mean (SD)	Male mean (SD)	Female mean (SD)	Internal reliability
EQ-i Intra	34.83 (6.33)	35.22 (6.49)	34.65 (6.27)	.80
EQ-i Inter	41.34 (4.95)	40.29 (4.77)	41.79 (4.96)	.80
EQ-i SM	29.61 95.28)	30.83 (4.62)	29.08 (5.46)	.80
EQ-i Adapt	25.52 (4.08)	25.44 (4.17)	25.55 (4.04)	.80
EQ-i GM	36.83 (6.63)	37.07 (6.60)	36.73 (6.64)	.87
EQ-i Total	168.12 (18.38)	168.85 (18.05)	167.81 (18.53)	.90
Task	57.47 (9.59)	56.45 (9.79)	57.91 (9.48)	.90
Emotion	44.76 (11.91)	40.66 (11.50)	46.53 (11.67)	.90
Distraction	21.36 (6.15)	19.63 (6.16)	22.10 (6.00)	.78
Social diversion	16.79 (4.70)	15.87 (4.50)	17.18 (4.73)	.83
E	43.68 (11.96)	43.59 (10.40)	43.71 (12.58)	.86
A	57.01 (8.99)	55.54 (9.19)	57.65 (8.85)	.83
C	50.60 (10.39)	49.05 (10.77)	51.27 (10.16)	.83
N	36.32 (12.02)	33.73 (12.29)	37.44 (11.75)	.82
O	55.10 (8.60)	56.68 (8.81)	54.42 (8.43)	.79
PA (T1)	34.88 (7.04)	35.17 (6.57)	34.76 (7.24)	.86
NA (T1)	23.19 (7.96)	21.92 (7.93)	23.74 (7.91)	.87

Table 1 (continued).

	Overall mean (SD)	Male mean (SD)	Female mean (SD)	Internal reliability
Stress(year,T1)	40.24 (8.49)	37.93 (8.46)	41.23 (8.32)	.89
Stress(week,T1)	37.19 (9.43)	35.80 (10.11)	37.79 (9.07)	.89
LS (T1)	24.04 (6.89)	23.49 (7.09)	24.27 (6.80)	.88
PA(T2)	30.13 (7.63)	30.96 (7.33)	29.80 (7.73)	.89
NA(T2)	25.30 (7.87)	24.74 (8.62)	25.51 (7.57)	.86
Stress(year,T2)	40.54 (7.51)	38.91 (8.35)	41.17 (7.07)	.87
Stress(week,T2)	41.66 (8.83)	40.60 (9.69)	42.07 (8.45)	.87
LS(T2)	25.55 (6.99)	23.35 (7.50)	23.63 (6.80)	.89

Intra = Intrapersonal, Inter = Interpersonal, Adapt = Adaptability, SM = Stress Management, GM = General Mood, E = Extraversion, A = Agreeableness, C = Conscientiousness, N = Neuroticism, O = Openness, PA = Positive Affect, NA = Negative Affect, LS = Satisfaction with Life Scale.

Table 2. Correlations amongst the study variables

	Intra	Inter	SM	Adapt	GM	Task	Em	Distr	Socd	E	A	C	N	O
Inter	**.39**													
SM	**.18**	**.18**												
Adapt	.16	**.18**	**.22**											
GM	**.56**	**.41**	**.40**	**.24**										
Task	**.35**	**.30**	**.19**	**.61**	**.46**									
Em	**-.44**	-.12	**-.49**	-.15	**-.59**	**-.23**								
Distr	-.09	.06	**-.17**	-.10	-.11	-.09	**.29**							
Socd	**.22**	**.39**	-.03	-.05	**.27**	**.18**	-.04	**.34**						
E	**.59**	**.41**	.03	-.02	**.52**	**.21**	**-.37**	-.02	**.29**					
A	**.24**	**.66**	**.33**	.12	**.39**	**.23**	**-.21**	-.02	**.28**	**.27**				
C	**.34**	**.30**	**.32**	**.42**	**.39**	**.55**	**-.32**	-.08	.14	**.22**	**.30**			
N	**-.31**	-.15	**-.56**	**-.20**	**-.56**	**-.24**	**.64**	**.24**	-.04	**-.25**	**-.32**	**-.34**		
O	**.18**	**.21**	-.06	.09	.08	.14	-.07	-.03	.02	.09	**.20**	.04	.02	
PA1	**.32**	**.36**	.11	**.19**	**.49**	**.46**	**-.24**	.00	**.25**	**.39**	**.34**	**.31**	**-.27**	**.25**

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Table 2 (continued).

	Intra	Inter	SM	Adapt	GM	Task	Em	Distr	Socd	E	A	C	N	O
NA1	**-.35**	-.09	**-.44**	-.12	**-.53**	**-.18**	**.68**	**.22**	-.04	**-.27**	**-.19**	**-.31**	**.64**	.01
PA2	**.29**	**.31**	.12	.12	**.38**	**.34**	**-.19**	-.06	**.21**	**.27**	**.26**	**.21**	**-.22**	.13
NA2	**-.22**	-.02	**-.31**	-.13	**-.33**	-.11	**.38**	.11	-.11	-.13	-.16	**-.24**	**.38**	.05
LS1	**.36**	**.25**	**.25**	.10	**.68**	**.32**	**-.42**	-.07	**.23**	**.32**	**.26**	**.33**	**-.41**	.01
LS2	**.32**	**.30**	**.20**	.14	**.59**	**.32**	**-.35**	-.09	**.25**	**.32**	**.25**	**.31**	**-.34**	.04
SY1	**-.37**	**-.19**	**-.51**	**-.24**	**-.70**	**-.38**	**.69**	**.18**	-.13	**-.30**	**-.23**	**-.38**	**.61**	.00
SW1	**-.36**	**-.20**	**-.36**	**-.16**	**-.60**	**-.32**	**.57**	**.18**	-.13	**-.31**	**-.23**	**-.36**	**.58**	-.05
SY2	**-.32**	**-.20**	**-.43**	-.17	**-.60**	**-.28**	**.55**	**.19**	-.14	**-.27**	**-.28**	**-.32**	**.54**	-.01
SW2	**-.28**	-.16	**-.29**	-.17	**-.43**	**-.28**	**.33**	.09	-.16	**-.23**	**-.20**	**-.26**	**.37**	.00
CDff	-.08	.01	.03	-.04	.02	.05	-.03	-.04	-.01	.03	.05	.06	.04	-.06
Expr	.14	.16	.09	**.20**	.18	**.30**	-.13	.01	.10	.14	.09	**.26**	-.17	.13
Grade	**.22**	.11	.06	**.24**	.15	**.28**	-.12	-.12	.02	.10	.09	**.26**	-.05	.10
Att	.16	.17	.13	.11	**.20**	**.19**	-.14	-.05	.09	.08	.16	.12	-.14	.09

Table 2 (continued).

	PA1	NA1	PA2	NA2	LS1	LS2	SY1	SW1	SY2	SW2	CDiff	Expr	Grade
NA1	**-.20**												
PA2	**.46**	-.15											
NA2	-.10	**.49**	**-.26**										
LS1	**.40**	**-.40**	**.32**	**-.25**									
LS2	**.36**	**-.32**	**.50**	**-.32**	**.75**								
SY1	**-.33**	**.59**	**-.32**	**.41**	**-.60**	**-.51**							
SW1	**-.42**	**.67**	**-.33**	**.43**	**-.49**	**-.40**	**.65**						
SY2	**-.29**	**.52**	**-.37**	**.49**	**-.53**	**-.58**	**.76**	**.59**					
SW2	**-.26**	**.37**	**-.59**	**.65**	**-.40**	**-.57**	**.53**	**.54**	**.69**				
CDiff	.05	.08	-.08	**.19**	.08	.03	.01	.05	.05	.18			
Expr	**.24**	-.16	**.47**	**-.28**	**.21**	**.36**	**-.22**	**-.22**	**-.26**	**-.43**	-.13		
Grade	.12	-.14	**.31**	**-.20**	.08	**.25**	-.18	-.16	**-.22**	**-.29**	-.16	**.42**	
Att	**.25**	-.02	**.35**	-.15	**.20**	**.37**	**-.19**	-.12	**-.31**	**-.31**	.01	**.43**	**.35**

Abbreviations for EQ-i components: Inter = Interpersonal, Intra = Intrapersonal SM = Stress Management, GM = General Mood. For CISS Task = Task focus, Em = Emotion focus, Distr = Distraction, Socd = Social Diversion. E = Extraversion, A = Agreeableness, C = Conscientiousness, N = Neuroticism, O = Openness, PA = Positive Affect, NA = Negative Affect, LS = Satisfaction with Life Scale, CDiff = course difficulty, Expr = prepared for exams, Grade = expected grade, Att = attitude to course. Due to the large sample size there were a large number of significant correlations; those with $p < .001$ are shown in bold.

Table 3. Results of tests for age differences in EI, coping and stress

	Younger mean (SD)	Older mean (SD)	*t*	*p*
Intrapersonal EI	34.65 (6.41)	36.07 (5.64)	1.63	.104
Interpersonal EI	41.21 (4.96)	42.23 (4.78)	1.50	.133
SM	29.61 (5.30)	29.57 (5.17)	.065	.948
Adaptability	25.35 (4.08)	26.70 (3.90)	2.42	**.015**
General Mood	36.65 (6.78)	38.12 (5.27)	1.61	.108
EQ-i total	167.47 (18.55)	172.68 (16.55)	2.07	**.039**
Stress year (T1)	40.44 (8.47)	38.80 (8.60)	1.40	.161
Stress week(T1)	37.57 (9.47)	34.55 (8.81)	2.33	**.020**
Stress year (T2)	40.91 (7.45)	38.13 (7.56)	2.38	**.018**
Stress week(T2)	42.01 (8.76)	39.38 (9.01)	1.91	.058

SM = Stress Management

Degrees of freedom 473 at T1, 349 at T2.

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Table 4. Results of tests for sex differences.

	Male mean (SD)	Female mean (SD)	*t*	*p*
Intrapersonal	35.22 (6.49)	34.65 (6.27)	.900	.370
Interpersonal	40.29 (4.77)	41.79 (4.96)	-3.06	**.002**
SM	30.83 (4.62)	29.08 (5.46)	3.33	**.001**
Adaptability	25.44 (4.17)	25.55 (4.04)	.27	.789
GM	37.07 (6.60)	36.73 (6.64)	.514	.607
EQ-i total	168.85 (18.05)	167.81 (18.54)	.566	.572
Task	56.45 (9.79)	57.91 (9.48)	1.516	.130
Emotion	40.66 (11.49)	46.53 (11.67)	5.057	< **.001**
Distraction	19.63 (6.16)	22.10 (6.00)	4.084	< **001**
Social Diversion	15.87 (4.50)	17.18 (4.73)	2.802	**.005**
E	43.59 (10.40)	43.71 (12.58)	.097	.923

A	55.54 (9.19)	57.65 (8.85)	2.359	**.019**
C	49.05 (10.77)	51.27 (10.16)	2.147	**.032**
N	33.73 (12.29)	37.44 (11.75)	3.115	**.002**
O	56.68 (8.81)	54.42 (8.43)	2.648	**.008**
Stress year(T1)	37.93 (8.46)	41.23 (8.32)	3.944	< **.001**
Stress week(T1)	35.80 (10.11)	37.79 (9.08)	2.11	**.035**
Stress year(T2)	38.91 (8.35)	41.17 (7.07)	2.55	**.011**
Stress week(T2)	40.60 (9.69)	42.07 (8.45)	1.396	.162

SM = Stress Management, GM = General Mood, E = Extraversion, A = Agreeableness, C = Conscientiousness, N = Neuroticism, O = Openness.

Table 5. Scale-level factor analysis for EI and coping scales

	Emreg	Avoidance	Task Focus
Emotion coping	**-.90**	.10	.11
GM	**.73**	.30	.14
SM	**.66**	-.16	.05
Intrapersonal	**.61**	.35	.07
SocDiv coping	.05	**.84**	-.07
Distraction coping	-.43	**.63**	-.07
Interpersonal	.24	**.60**	.21
Adaptability	-.11	-.15	**.95**
Task coping	.07	.13	**.84**

Exploratory factor analysis was done using the principal components method and direct oblimin rotation. Pattern matrix elements above .5 shown in bold.

GM = General Mood, SM = Stress Management, Soc Div = Social Diversion.

Table 6. Correlations of factor scores with other measures

	Emreg	Avoidance	Task Focus
E	.47***	.43***	.13**
A	.39***	.38***	.25***
C	.42***	.17**	.54***
N	-.69***	.02	-.25***
O	.09	.11*	.14*
Stress year (T1)	-.74***	-.09*	-.34***
Stress week(T1)	-.62***	-.12*	-.27***
Stress year (T2)	-.61***	-.10	-.26***
Stress week(T2)	-.41***	-.14**	-.24***
Life satisfaction (T1)	.54***	.26***	.25***
Life satisfaction (T2)	.45***	.28***	.27***
Course difficulty	.02	-.03	.00

Prepared for exams	.16**	.13*	.27***
Expected grade	.17**	.04	.29***
Course attitude	.20***	.11*	.18**

E = Extraversion, A = Agreeableness, C = Conscientiousness, N = Neuroticism, O = Openness.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Figure captions

Figure 1

Conceptual form of the model for associations of personality and composite EI/coping factors with stress.

Figure 2

SEM model for stress. For clarity some correlations included in the model are not shown in the diagram. These were correlations amongst the personality traits, and between the two composite factors. The values for these correlations from the model were: C/E .22, N/E -.27, N/C -.34, factor correlation .35.

Figure 3

SEM model for SWB. A correlation between N and E was included in the model; its value was -.27.

Figure 1

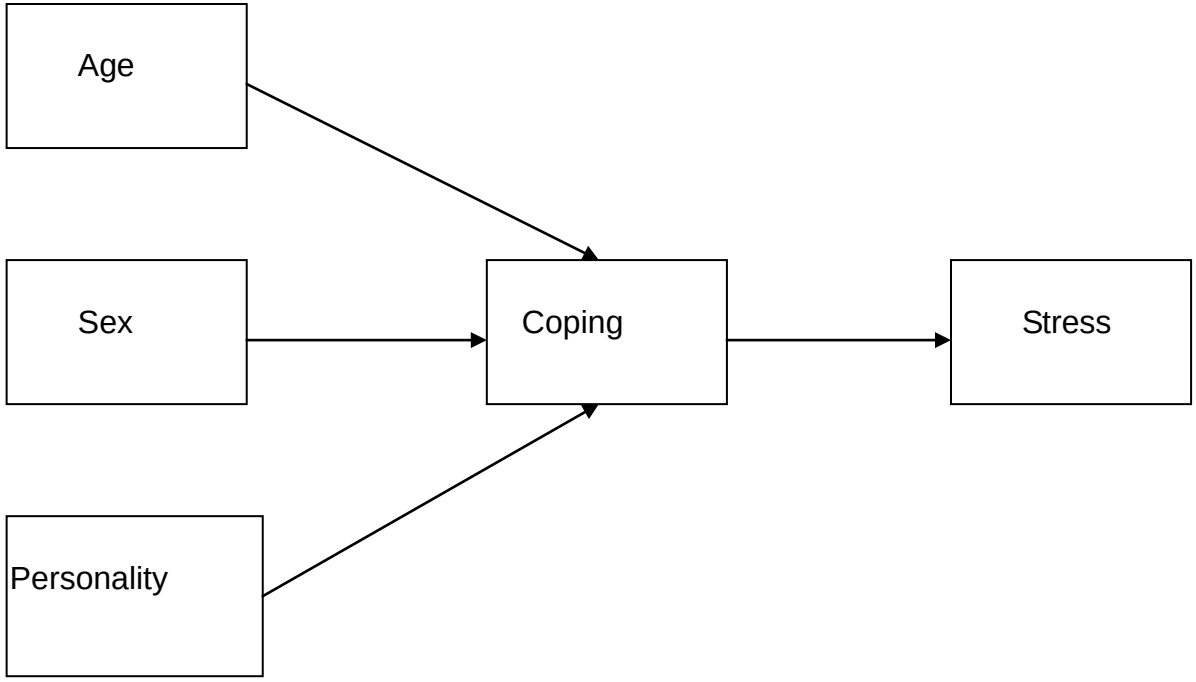

Figure 2

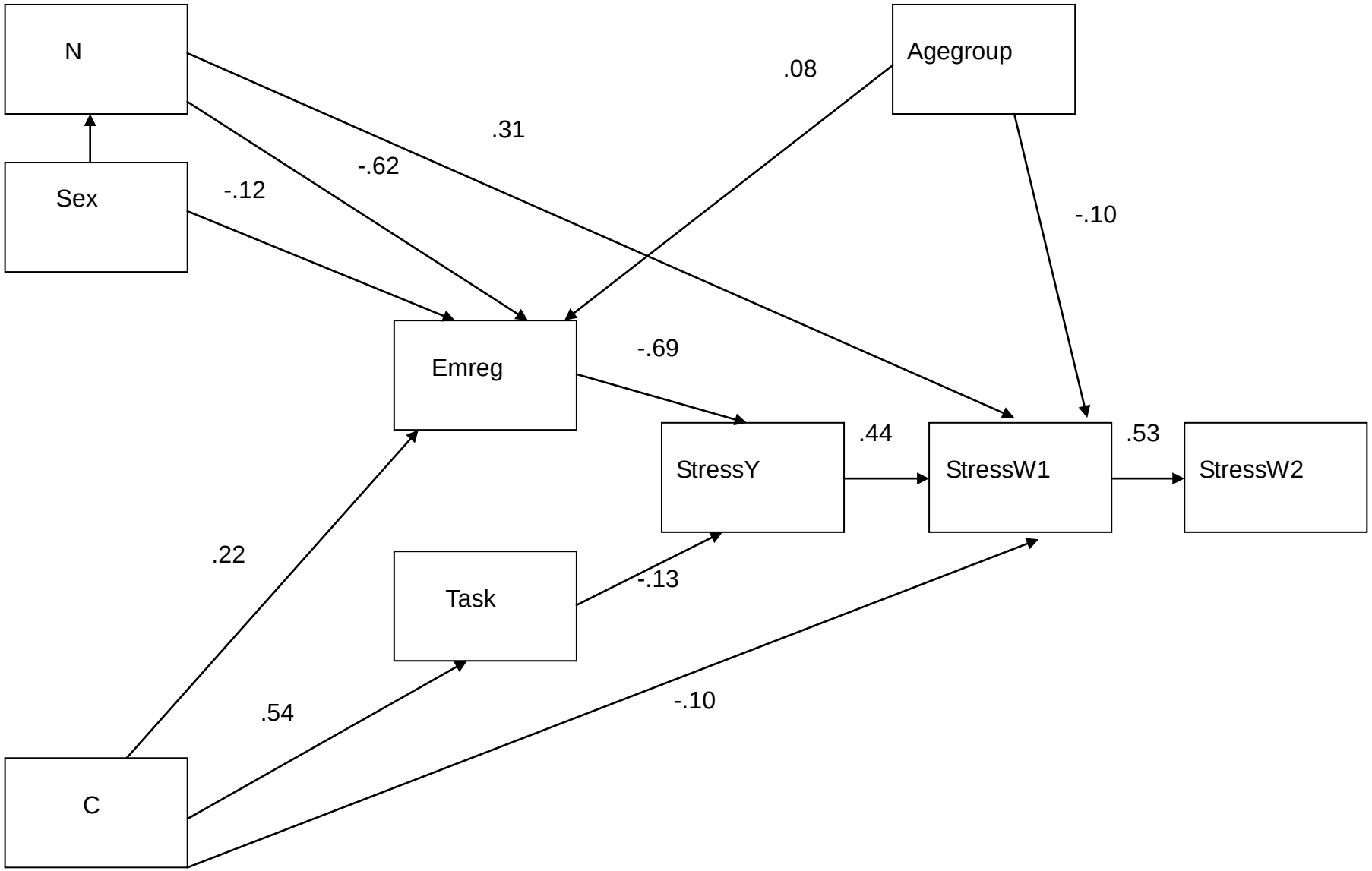
N
Agegroup
Sex
Emreg
StressY
StressW1
StressW2
Task
C
.08
.31
-.62
-.12
-.10
-.69
.44
.53
.22
-.13
.54
-.10

Figure 3